

A New *Tephritis* From Flower Heads of Thistle in Pakistan (Diptera: Tephritidae)¹

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The following apparently undescribed species of *Tephritis* was sent to me for determination by Dr. M.A. Ghani, Commonwealth Institute of Biological Control, Rawalpindi, Pakistan. The larvae of this species breed in the flower heads of *Carduus edelbergii* (= *nutans*) and is a promising biological control agent for this thistle.

Tephritis cardualis n. sp. (Figs. 1-6)

This species appears to fit nearest to *mongolica* Hendel than to any other known *Tephritis* because of the all brown third costal section (cell Sc), or this section may have a tiny pale spot at apex, and by other details of the wing venation. It differs by having the markings in second costal section very faint, scarcely visible, not with two dark spots; by lacking a large hyaline spot filling most of apex of cell R₃; the hyaline markings from costal margin in cell R¹ not extending beyond vein M₁₊₂ rather than extending through cell M₂ before and after the r-m crossvein as in *mongolica*; the hyaline spot at apex of cell R₅ not occupying entire apical portion and other markings differ as shown in Fig. 1. Compare with Hendel, 1927, in Lindner, *Die Fliegen der Palaearktischen Region* 49: 184, plate XV, Fig. 7 and Zia, 1937, *Sinensia* 8(2): 225, Fig. 54. Of the *Tephritis* known from the Indian subcontinent it would fit nearest to *lyncea* Bezzi from northern India but differs by lacking a hyaline spot in middle of third costal section, lacking three large hyaline spots in fourth costal section (cell R₁) as well as by many other details of the wing markings as in Fig. 1. Compare with Bezzi, 1913, *Mem. Indian Museum* 3: plate 10, Fig. 57.

Male. Densely yellow-gray pollinose. Dorsum of thorax and abdomen covered with yellow subrecumbent scale-like setae. *Head:* Yellow except for the dark colored compound eyes, densely golden-gray pollinose. Upper superior fronto-orbital, outer vertical and post ocellar bristles yellow, flattened, scale-like. Other head bristles dark brown to black. Antennae mostly yellow, tinged with brown on apex of third segment and with the aristae predominantly brown to black. *Legs:* Entirely yellow, I see nothing which would differentiate them from other *Tephritis*.

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Wings: With markings as in Fig. 1. Second costal cell almost all hyaline, with a very faint marking of brown at base and one near middle. Apical portion of subcostal cell (third costal section) entirely dark brown in most specimens, sometime with a tiny pale spot at extreme apex. Cell R_1 with a large irregular hyaline mark extending over basal two-thirds, from end of vein R_1 , interrupted in middle by a narrow brown streak and extending into middle portion of cell R_3 as two or three irregular spots. Apical portion of cell R_3 with a small hyaline spot just below tip of vein R_{2+3} and another small spot just above apex of vein R_{4+5} ; the latter sometimes continuous with a small subapical spot in cell R_5 . Cell R_5 with a moderately large apical spot which does not extend across entire apex of cell. A large subapical brown spot, uninterrupted by hyaline markings, extends through much of cell R_3 and upper half of cell R_5 , the latter cell with a series of small hyaline spots along bottom portion, just above vein M_{1+2} beyond r-m crossvein. Cells M_2 , M_4 and Cu with numerous hyaline spots, the brown markings of the wing becoming more faint in the posterior portion. *Abdomen:* Mostly black in ground color narrowly yellow on apices of terga, with black bristles only at apex of fifth tergum. Fifth sternum moderately concave in middle of hind margin (Fig. 2). Epandrium two times higher than long, the surstyli pointed, heavily sclerotized and blackened apically. The teeth of the tenth sternum very large and blunt (Fig. 4). Ejaculatory apodeme broad, heavily sclerotized as in Fig. 3.

Length: Body and wings 4.0-4.25 mm.

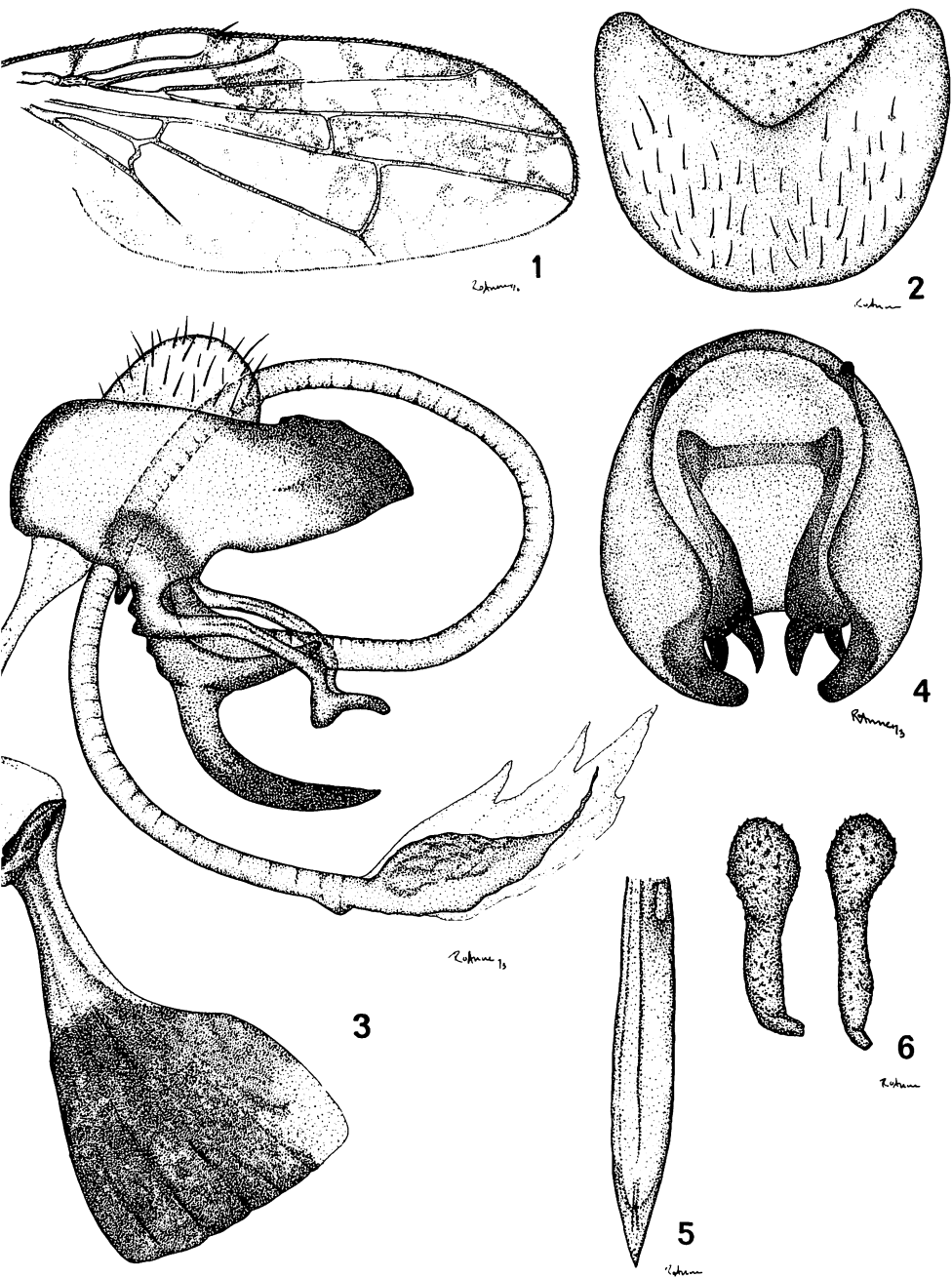
Female. Fitting description of male except for sexual characters. Base of ovipositor rufous, approximately equal in length to terga 3-6. Piercer of ovipositor about four-fifths as long as basal segment and sharply pointed at apex (Fig. 5), lacking preapical setae. Two gourd-shaped, microscopically spiculated spermathecae are present (Fig. 6).

Length of body, including ovipositor base: 5.25 mm.; wings, 4.5 mm.

The drawings have been prepared by Miss Roanne Tsutsui. I appreciate this valuable help.

Holotype male, allotype female, and 25 paratypes—11 males, 14 females from Choprial, Swat District, Northwest Frontier Province, Pakistan, 10 June 1968 and three male paratypes from Sangota (Swat), 11 May 1968. All received from the Commonwealth Institute of Biological Control, Rawalpindi, Pakistan.

Type and allotype in British Museum (Natural History), paratypes distributed among the following institutions: Commonwealth Institute of Biological Control, Rawalpindi; United States National Museum; and University of Hawaii.



FIGS. 1-6—1. Wings; 2. fifth sternum of male; 3. male genitalia lateral; 4. male genitalia, end view; 5. piercer of female ovipositor; 6. spermathecae.